combinations or solution; because undoubtedly these are formed.

Granting that chemical combinations likewise take place, does it not seem probable that when these latter are present they may be strictly termed impurities?

If so, iron alloys may be divided into two classes—(1) those in the homogeneous or fourth state, "the true alloys," (2) those in which chemical combinations or solution only takes place; and this latter class may be termed impure metal, in contradistinction to the first or quasi elementary body.

In conclusion it is urged that many of our most eminent metallurgists and men of science have "by very different modes of investigation" come to the conclusion that iron itself is a compound very complex body. It is true that we have only indirect proof of this, but it only remains to find methods of isolating these bodies from each other.

NOTES.

THE medals of the Royal Society are this year awarded as follows:—The Copley Medal to Prof. Rudolph Virchow, For. Mem. R.S., for his investigations in Pathology, Pathological Anatomy, and Prehistoric Archæology; the Rumford Medal to Mr. Nils C. Dunér, for his Spectroscopic Researches on Stars; a Royal Medal to Mr. John Newport Langley, F.R.S., for his work on Secreting Glands, and on the Nervous System; a Royal Medal to Prof. Charles Pritchard, F.R.S., for his work on Photometry and Stellar Parallax; the Davy Medal to Prof. François Marie Raoult, for his researches on the Freezing Points of Solutions, and on the Vapour Pressures of Solutions; the Darwin Medal to Sir Joseph Dalton Hooker, F.R.S., on account of his important contributions to the progress of Systematic Botany, as evidenced by the "Genera Plantarum" and the "Flora Indica," but more especially on account of his intimate association with Mr. Darwin in the studies preliminary to the "Origin of Species." The award of the Royal Medals has been graciously approved by the Queen.

THE American Ornithologists' Union has been holding its tenth congress at Washington. The meetings began on Tuesday, and were held in the U.S. National Museum.

JAMES PLANT, F.G.S., of Leicester, who has just died in his seventy-fifth year, was well known as a local geologist in the midland counties, and as a member for some years of the Committee of the British Association on Erratic Blocks. Such blocks are numerous in Leicestershire, those on the southern side of the county being chiefly derived from the Charnwood range, and Mr. Plant was diligent in searching out and recording the more important of them. Several large boulders striated and partially polished stand in the grounds of the Leicester Museum, rescued by him from various railway cuttings. In 1868 he collected a very fine series of massive specimens representing all the hard rock formations of his native county, for exhibition at the meeting of the Royal Agricultural Society. These were afterwards built up into a great cone about 8 feet in diameter and 15 feet high in the museum grounds, and when the enlargement of the building necessitated its removal they were formed into a diagrammatic geological section on another site. Having to be again removed two years ago some of them were used to form a rough geological model of Charnwood Forest in the Abbey Park. In his latter years Mr. Plant acted as consulting geologist in several important borings for water and coal. The curious concentric rings on the face of a rock in Charnwood Forest interested him greatly, and with much trouble and labour he succeeded in obtaining plaster casts of them. He was active also in procuring photographs of many of the most remarkable geological features of the district.

DR. R. v. WETTSTEIN, of Vienna, editor of the *Oesterreichische Botanische Zeitschrift*, has been appointed ordinary Professor of Botany at the University of Prague.

THE Prussian Government has decided to introduce the use of the Centigrade thermometer instead of that by Reaumur, which is still in use in some parts, and no further Reaumur thermometers are to be supplied to any public officials. The Centigrade thermometer has long been in use in Germany for scientific purposes.

A VALUABLE collection of fossils, minerals, and shells, comprising several thousand specimens, and particularly rich in specimens from the carboniferous formation, has just been presented to the University College of North Wales by Mr. Evan Roberts, of Manchester. It is hoped that this gift will become the nucleus of an important geological collection suited to the educational requirements of a University College, and that similar gifts will from time to time be made to the College by those interested in the progress of geological study.

THE Oxford Medical Society held its first meeting on Saturday last, at the University Museum. Sir Henry Acland presided. The inaugural address was delivered by Sir James Paget. He said they all knew that the practice and science of medicine, or, as it was sometimes called, the science and art of medicine, were by some regarded as things quite distinct, wide apart, and in study almost incompatible. A few there were who had the capacity of pursuing both. The great mass of those engaged in the pursuit of medicine were either practitioners or men devoting themselves to science. Each method of work was essential to the practice of the other. It might be asked how could practitioners work as men of science even where they had the time for it? He believed that would come about by the increase in the teaching of science in all medical schools and Universities. He pointed out the work which might be undertaken by the society, and spoke at length on various subjects which might be studied with advantage. Prof. Burdon-Sanderson said the society had been established for the furtherance and promotion of science, and they wished to make an advance, so to speak, towards the University. There was a yearning in the minds of the medical profession in Oxford to unite itself more closely than it had hitherto with the scientific studies of the University which depended immediately on medicine.

THE weather has continued very unsettled during the past week, the most notable features being the prevalence of fog and abnormally high temperature. During the latter part of last week fog extended over nearly the whole of England, as well as a large part of the Continent. In London and the suburbs intense darkness occurred on several days, interspersed with very short intervals of sunshine, but in the north-western parts of the kingdom the weather was generally fair. These conditions were due to the distribution of pressure, which was cyclonic over the western portion of these islands, but anti-cyclonic over western Europe. Temperature was uniformly high for the season, the daily maxima ranging from about 50° to 60°, and reached 62° in several places in the southern counties on Monday. This maximum is the highest that has been recorded in the neighbourhood of London during the last ten years. In the early part of the present week a deep depression passed to the westward of Ireland from the Atlantic, causing southerly gales in the north and west, with rain in all parts of the country, the amount measured at Valencia Observatory on Monday exceeding an inch. On Tuesday afternoon a fresh depression reached our south-west coasts from the south-eastwards, while a trough of low pressure lay over the Bay of Biscay and France, causing further heavy rains and local fogs. For the week ending the 12th instant the reports show that bright sunshine was, as might have been expected, very deficient generally, especially over northern and eastern England, where the percentage of possible duration was only 9; the lowest amount was at Stonyhurst, where it was only 2 per cent. The south-west of England enjoyed the brightest weather, as there the sunshine amounted to 33 per cent. of the possible amount.

THE current number of the *Annalen der Hydrographie* contains a short note of a hurricane at Marseilles on October 1, which is said to have been more severe than any experienced during the last thirty years. From 8 a.m. until 1 p.m. the wind, rain, hail and lightning were incessant, all the lower parts of the town being under water, while several houses and bridges in the neighbourhood were destroyed. The weather charts for the day show that the storm was caused by a small whirl which occurred on the south-eastern side of a large depression, whose centre lay in the south of Scotland. While the centre of the depression scarcely altered its position, the whirl increased in extent, but diminished in intensity, and on October 3 it had crossed Northern Italy and lay over Hungary.

MR. CHARLES CARPMAEL, director of the meteorological service of the Dominion of Canada, urges in his latest report the need for more thorough inspection of the various stations under his control. He points out that the stations in Great Britain and Ireland, connected with the Meteorological Office, London, are constantly inspected, and that in every country where meteorology is worked out on a large scale inspection is admitted as the only system whereby trustworthy and satisfactory results can be obtained. He recommends therefore that a sufficient appropriation should be placed at his disposal to enable him to have the meteorological stations in the Dominion inspected and the observers thereof thoroughly instructed in the duties required of them. If this is not done the data furnished to the Central Office cannot, he says, be accurate.

TWO numbers have now been issued of the new series of the quarterly cryptogamic journal, *Grevillea*, under the editorship of Mr. G. Massee. It is conducted very much on the old lines, and contains many articles of interest to cryptogamists. It is strange that one peculiarity of the journal should still be retained which detracts very much from its usefulness as a work of reference, the absence of any table of contents or index to each separate number.

THE Cambridge University Press has issued the Sedgwick prize essay for 1886, by the late Thomas Roberts, on the Jurassic rocks of the neighbourhood of Cambridge. The essay has been edited by Mr. Henry Woods, Scholar of St. John's College, and Lecturer on Palæontology in the Woodwardian Museum. In an interesting preface, Prof. T. McKenny Hughes explains the nature of the problem which the author endeavoured to solve, and expresses his belief that the work is indispensable for the student of Cambridge geology, and most valuable for all specialists in the Jurassic rocks.

SIR HENRY H. HOWORTH has completed and will shortly publish a considerable work on which he has been long engaged entitled, "The Glacial Nightmare and the Flood." It begins with an account of the various theories which have been forthcoming to explain the drift phenomena, in which the very large literature on the subject has been for the first time condensed and tabulated. It then proceeds to criticize the extreme glacial views which have recently prevailed among geologists, and to call in question the theory of uniformity as developed by the followers of Lyell and Ramsay, and especially to attack the notion that ice is capable of distributing materials over hundreds of miles of level country, and of producing many of the effects attributed to it by the glacial school of geologists. The author argues that the evidence points to the former existence of much larger glaciers than exist now, but not to an ice period when the temperate regions were covered with ice. On the contrary, these great glaciers existed side by side of fertile plains. Lastly he argues that the phenomena of the drift can only be explained by reverting in a large measure to the diluvial theories of Sedgwick and Murchison, Von Buch and others, and that the purely geological evidence is completely at one with that collected in the author's previous work on "The Mammoth and the Flood," and establishes that a great diluvial catastrophe forms in the temperate zones the dividing line between the mammoth age and our own.

THE Libraries Committee of the Glasgow Town Council, in the eleventh general report on the Mitchell Library, Glasgow, make a suggestion which deserves to be kept in mind. It is to the effect that an admirable way of perpetuating the memory of a relative or friend would be to present a public library with a separate collection of books, to be kept together and called by such name as may seem proper to the donors. "Such a memorial collection," say the Committee, "would, with propriety, be composed of books devoted to any department of literature or learning in which the person to be commemorated was interested or which the donors desired to see more fully represented."

A VALUABLE paper on the present state of Morocco is contributed to the current number of the *Revue Scientifique*, by M. A. Le Châtelier. He brings out very strikingly the mixed character of the population of Morocco. First he notes the fair-haired, blue-eyed type, which is represented in the sculptures of some tombs of the twelfth Egyptian dynasty. Then come the various Berber types, the Arabs, several elements (including the Draoua) which have come down from remote antiquity, Spanish Moors and Jews, and the descendants of Christian captives. M. Le Châtelier thinks we must also take into account descendants of Phenicians, Carthaginians, Romans, Byzantines, and Vandals.

MR. C. H. EIGENMANN has contributed to the Proceedings of the U.S. National Museum (vol. xv.) a paper in which he presents a valuable account of the observations made by him on the fishes of San Diego and vicinity from December 11, 1888, to March 4, 1890. Especial attention was paid to the spawning habits and seasons, the embryology, and migration of the fishes of Southern California. A diary was kept of the occurrence of each species throughout the year 1889 and part of 1890. Mr. Eigenmann's knowledge of the occurrence of each species is largely based on observations of the fish brought into the markets, which he visited twice or thrice daily, and of those caught with hook and line by the numerous habitual fishermen found on each of the wharves, and of those caught by the seiners, whom he accompanied on several occasions. During the early part of 1888 each individual fisherman sold his catch as best he could and the data for this part of the year are not as full as for the latter part of 1888, when practically the whole catch was brought to two markets, where Mr. Eigenmann could see the fish as they were unloaded. The knowledge of the ocean fishes is largely derived from frequent visits to ocean tide-pools, from the fish brought to the markets, and from a two-weeks' stay on the Cortes Banks. As a matter of course, hundreds of specimens of most species have been observed to every one preserved, and the present paper is to be looked upon as a contribution to the economic history of the fishes, rather than to the anatomy of the various species. With two exceptions, the types of the new species discovered, and otherwise interesting specimens, have been deposited in the U.S. National Museum. A nearly complete series of types has been placed in the British Museum, and minor series in the Museum of Comparative Zoology and the California Academy of Sciences.

THE Committee of the Field Naturalists' Club of Victoria have hit upon an excellent plan for interesting the more active members in definite lines of investigation. They have arranged that special meetings shall be held once a month for the carrying on of practical work which cannot conveniently be undertaken at the ordinary monthly meetings. The first of these special meetings assembled on August 22 in the Royal Society's Hall, Melbourne. We learn from the Club's journal that there was a good attendance of members, those interested in microscopic work being principally represented. No fewer than twenty-four microscopes were set up. Mr. J. Shephard undertook to give a slight sketch of some interesting forms amongst the rotifera. A typical form was first described, the chief points in its structure being made clear by good diagrams, and then variations in the various orders from this type were briefly referred to—special allusion being made to the modifications in the ciliary wreath and the foot. Mr. Shephard had fortunately met with a large number of the Australian member of the rhizotic group (*Lacinularia pedunculata*), and at the conclusion of his remarks a slide of mounted individuals was handed to each member for careful examination under the microscope. Half an hour was profitably spent in the endeavour to make out all the points of detail in the specimens, during which time Mr. Shephard also supplied full information as to the best methods of mounting and examining these interesting organisms. Some four or five entomologists had a quiet corner to themselves, where they compared specimens and talked over some plans for future operations.

AT the ordinary monthly meeting of the Field Naturalists' Club of Victoria, on September 12, the feather boots of a native rain-maker from M'Donnell Ranges were exhibited. It is believed among the natives of certain tribes in Central Australia that droughts are caused by the swallowing up of all moisture by a rain-devil. If this personage can be captured and made to disgorge, rain follows at once. The feather boots are worn by the native rain-maker in order that he may steal noiselessly and unawares on the author of the drought and consequent misery. Mr. A. W. Howitt is having drawings made of these boots, which he considers to be one of the most valuable and interesting additions to aboriginal ethnology yet brought to light.

AN interesting paper on the anthropology of Spain, contributed to the "Anales" of the "Soc. española de Historia Natural" by Luis de Hoyos Sáinz and Telesforo de Aranzadi, has now been published separately at Madrid. The paper is accompanied by three excellent maps, in which, by means of various degrees of shading, the authors bring together a number of most interesting conclusions. One of these maps shows the cranial types which prevail in different parts of Spain.

IN the November number of the *Mediterranean Naturalist*, Mr. John H. Cooke gives an interesting account of his recent discovery of Ursus arctos in the Malta Pleistocene. The late Admiral Spratt and the late Prof. Leith Adams found among the cavern deposits of the Maltese Islands a remarkable land fauna, including elephants, hippopotami, land tortoises, gigantic dormice, and aquatic birds. From the fact that many of the remains of elephants presented the appearance of having been fiercely gnawed, it was concluded that carnivoræ had lived in the district; but, notwithstanding the most diligent search extending over a period of twenty years, the only tangible evidences in support of the inference were these gnawed bones. Mr. Cooke has now solved the problem. His discovery was made in the spring of the present year, when, with the aid of a money grant from the Royal Society, he carried out some excavations in the Har Dalam cavern, a subterraneous gallery situated in a gorge of the same name in the eastern extremity of Malta. After having excavated six large trenches and obtained some hundreds of bones of *Hippotamus pentlandi*, *Elephas mnadraensis*, *Cervus barbaricus*, and numerous other animals, he had the satisfaction of discovering an entire ramus of the lower jaw of a bear, Ursus arctos with its canine and molars *in situ*, as well as five other canines belonging to other individuals of the same species. Afterwards four other canines were discovered, each of which was in a fairly perfect state of preservation. One of these Mr. A. S. Woodward has determined as belonging to the left side of the mandible of a species of *Canis* equalling a wolf in size. Associated with these remains were found several vertebræ and fragments of limb-bones of hippo, and vertebræ and portions of horns of stags; but none of them presented any evidences of having been gnawed.

THERE is some difference of opinion as to whether the process of digestion is promoted or hindered by bodily exertion. Herr Rosenberg recently made some experiments on a small dog with reference to this point (*Pflüger's Archiv.*). The animal was fed once daily with a certain quantity of lean horseflesh, lard, and rice, and the amount of nitrogen and fat daily absorbed was determined by an examination of the excreta. There were five series of experiments, each consisting of a rest period of several days, followed by a working period of several days, the dog being made to work in a kind of treadmill. In some cases these efforts were made during stomachic digestion, in others during intestinal. In both series of experiments the differences observed lay within the limits of physiological variations, the inference being, accordingly, that in a healthy dog the utilization of food is quite independent of whether the animal rests during digestion or is energetically at work. Whether this applies to man could only be determined by direct experiment. Herr Rosenberg thinks it probable, however, as observations on people with heart disease appear to show that the absorption of food is to a certain extent independent of the circulation and distribution of the blood.

THE characteristic mantle of ascidians, consisting of a ground mass with cellulose and embedded cells, has been much studied, especially with regard to the origin of the cells. The most favoured view is that it is produced by the ectoderm, that it is a thickening of the outer epithelium. Recent researches by Kowalevsky, however (described to the St. Petersburg Academy) give reason for believing that the mantle-cells are from the mesoderm. Studying the metamorphosis of *Phallusia mamillata*, he observed certain mesoderm-cells applying themselves to the ectodermal epithelium, penetrating it and entering the mantle, which (secreted from the ectoderm) was before quite transparent. These cells also move freely about in the mantle, and this amœboid movement is further in favour of their mesodermal nature. A similar process occurs in vertebrates, viz., the passage of lymph-cells (leucocytes) through epithelium to the surface of a mucous membrane, or the surface of the body (in fishes); the mucous layer is comparable to the ground mass of the mantle. But in vertebrates the cells at length disappear; whereas in ascidians they persist. Besides their share in the growth of the mantle, they have an important function as phagocytes. In compound ascidians certain individuals are every now and again perishing, and these dying parts are known to be absorbed by the mantle-cells. Also, incoming foreign bodies, such as bacteria, the cells attack and seek to destroy. Numerous bacteria are always present in the mantle of tunicata. Moreover, experiments were made by introducing bacteria through fine glass tubes inserted in the mantle; the mesoderm-cells collected round these tubes, entered them, and fought with the bacteria. Kowalevsky attaches great importance to this function, and supposes the above-mentioned passage of wandering cells to the surface of epithelia to be explained as a means of protection against the intrusion of agents of disease.

MR. L. STEJNEGER gives in the fifteenth volume of the Proceedings of the U.S. National Museum an interesting preliminary description of a new genus and species of blind cave salamander from North America. The discovery of a blind cave salamander in America is regarded by Mr. Stejneger as "one of the most important and interesting herpetological events of recent years." The discovery is primarily due to Mr. F. A. Sampson, who, in July last year, found the adult animal as well as a larva in the Rock House Cave, Missouri, and forwarded both to the U.S. National Museum. Mr. George E. Harris afterwards went to great trouble in order to procure additional specimens. Unfortunately, he has only succeeded so far in obtaining larvæ, but Mr. Stejneger hopes to be able to secure more adults. A more detailed anatomical description of this interesting animal is postponed until then, as he has not felt justified in mutilating the type specimen beyond what was necessary in order to ascertain the character of the vertebræ. The present preliminary description is, therefore, only prepared in order to call attention to the discovery and to supply the diagnosis by which the animal may be identified.

DR. MORRIS GIBBS contributes to *Science* an interesting paper on the food of humming-birds. He has carefully dissected many humming-birds, both old and young, but has never found anything to convince him that the birds live on insects. It may be that at times when flowers are scarce some species of insects are captured, but Dr. Gibbs is satisfied that in season, when flowers are abundant, the ruby-throat of Michigan lives on honey.

IN a recent investigation of the action of accumulators, Herren Neumann and Streintz have shown (*Wied. Ann.*) that lead has the power of absorbing hydrogen. In one case the metal was used as an electrode, and charged with electrolytic hydrogen; in another it was melted, and a current of hydrogen passed through it. Care must be taken that the charged metal is not in contact with air, as the oxygen of the latter then unites with the hydrogen; and this, the authors think, is why previous observers have not been able to prove an occlusion of hydrogen by the lead plates of accumulators. The authors examined other metals, and they give the following numbers for the gas absorbed per unit volume of metal:—Lead, 0·15; palladium, 502·35; spongy platinum, 29·95; platinum black, 49·30; gold, 46·32; silver, 0·00; copper, 4·81; aluminium, 2·72; iron, 19·17; nickel, 16·85; cobalt, 153·00. When the same pieces of metal were repeatedly used, the occluding power generally fell off; in the case of the noble metals this is thought to be due to increased density; but why the occluding power of iron and cobalt should be reduced to one-half or more was not explained. Nickel and copper retained their power. With regard to the high power of cobalt, the authors tried that metal in a voltameter, but curiously it showed no hydrogen polarization when the charging circuit was opened.

MESSRS. WILLIAMS AND NORGATE's Natural Science Catalogue (No. 9) includes classified lists of books and periodicals on mathematics, astronomy, meteorology, physics, electricity, chemistry, microscopy, optics, mechanics, engineering, technology, &c., in French, German, and other foreign languages.

THE opening meeting of the one hundred and thirty-ninth session of the Society of Arts was held yesterday (Wednesday) evening. The following arrangements have been made for the ordinary meetings:—November 23, "The Disposal of the Dead," by F. Seymour Haden; November 30, "The Copper Resources of the United States," by James Douglas; December 7, "The Chicago Exhibition, 1893," by James Dredge; December 14, "The Utilization of Niagara," by Prof. George Forbes, F.R.S. The following papers, for which dates have not yet been fixed, will be read:—"Transatlantic Steamships," by Prof. Francis Elgar; "The Detection and Estimation of Small Proportions of Inflammable Gas or Vapour in the Air," by Prof. Frank Clowes; "The Purification of the Air Supply to Public Buildings and Dwellings," by William Key; "Pottery Glazes: their Classification and Decorative Value in Ceramic Design," by Wilton P. Rix; "The Chemical Technology of Oil Boiling, with a Description of a New Process for the Preparation of Drying Oils, and an Oil Varnish," by Prof. W. Noel Hartley, F.R.S.; "The Mining Industries of South Africa," by Bennett H. Brough; "Ten Years of Progress in India," by Sir William Wilson Hunter; "Australasia as a Field for Anglo-Indian Colonization," by Sir Edward N. C. Braddon, Agent-General for Tasmania; "Indian Manufactures," by Sir Juland Danvers, late Public Works Secretary, India Office; "Caste and Occupation at the last Census of India," by Jervoise Athelstane Baines, Imperial Census Commissioner for India; "Mexico, Past and Present," by Edward J. Howell; "Newfoundland," by Cecil Fane: "New Zealand," by W. B. Percival, Agent-General for New Zealand. The following courses of Cantor lectures will be delivered on Monday evenings, at eight o'clock: Prof. Vivian Lewes, "The Generation of Light from Coal Gas" (four lectures, November 21, 28, December 5, 12); Dr. J. A. Fleming, "The Practical Measurement of Alternating Electric Currents" (four lectures, January 30, February 6, 13, 20); Prof. W. Chandler Roberts-Austen, F.R.S., "Alloys" (three lectures, March 6, 13, 20); Lewis Foreman Day, "Some Masters of Ornament" (four lectures, April 10, 17, 24; May 1); C. Harrison Townsend, "The History and Practice of Mosaics" (two lectures, May 8, 15). A special course of six lectures, under the Howard bequest, will be delivered on the following Friday evenings at eight o'clock: Prof. W. C. Unwin, F.R.S., "The Development and Transmission of Power from Central Stations" (January 13, 20, 27; February 3, 10, 17).

THE additions to the Zoological Society's Gardens during the past week include a Squirrel Monkey (*Chrysothrix sciurea*) from Guiana, presented by Mrs. K. Betts; a Brown Capuchin (*Cebus fatuellus* ♀) from Brazil, presented by Miss L. Blackburn; a Himalayan Bear (*Ursus tibetanus* ♀) from Burmah, presented by Major W. H. Cunliffe; a Herring Gull (*Larus argentatus*) British, presented by the Rev. Sidney Vatcher; a Goshawk (*Astur palumbarius*) captured at sea, presented by Capt. F. Manley; an Egyptian Vulture (*Neophron percnopterus*) from Africa, presented by Mr. J. L. Teage; two —— Buntings (——) from North Africa, presented by Lord Lilford, F.Z.S.; eighteen Filfola Lizards (*Lacerta muralis* var. *filfolensis*) from the Island of Filfola, eighteen Wall Lizards (*Lacerta muralis* var. *tiliguerta*), an Ocellated Sand Skink (*Sepsocellatus*), a Moorish Gecko (*Tarentola mauritanica*), a Turkish Gecko (*Hemidactylus turcicus*) from Malta, presented by Capt. Robert A. Threshie; a Common Kite (*Milvus ictinus*) from Spain, received in exchange; five Dingos (*Canis dingo*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE NEW COMET.—The weather has prevented observations of the new Comet. Its brightness is about that of the nebula in Andromeda, and it has been suggested that it is a return of Biela's Comet.

COMET BROOKS (AUGUST 28).—The following is a continuation of the ephemeris of Comet Brooks for the present week, extracted from *Astronomische Nachrichten*, No. 312:—

12*h*. *Berlin M.T.*

1892.	R.A. app.	Decl. app.	Log *r*.	Log Δ.	Br.
	h. m. s.	° ′			
Nov. 17	10 25 3	−2 35·2			
18	29 40	3 34·7			
19	34 20	4 34·8			
20	39 3	5 35·3	0·0674	9·9568	20·51
21	43 48	6 36·2			
22	48 36	7 37·5			
23	53 27	8 39·0			
24	10 58 20	9 40·8	0·0540	9·9483	22·70

The unit of brightness occurred on August 31.